BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

DOCKET NO. 2023-388-E

In the Matter of:	)	
	)	**DIRECT TESTIMONY OF**
Application of Duke Energy Carolinas, LLC	)	**JOHN J. SPANOS**
For Authority to Adjust and Increase its	)	**FOR DUKE ENERGY**
Electric Rates and Charges	)	**CAROLINAS, LLC**
	)	

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is John J. Spanos. My business address is 207 Senate Avenue, Camp Hill, Pennsylvania, 17011.

Q. ARE YOU ASSOCIATED WITH ANY FIRM?

A. Yes. I am associated with the firm of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming").

Q. HOW LONG HAVE YOU BEEN ASSOCIATED WITH GANNETT FLEMING?

A. I have been associated with the firm since June 1986.

Q. WHAT IS YOUR POSITION WITH THE FIRM?

A. I am the President.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have Bachelor of Science degrees in Industrial Management and Mathematics from Carnegie-Mellon University and a Master of Business Administration from York College. I have over 37 years of depreciation experience, which includes giving expert testimony in more than 440 cases before 46 regulatory commissions, including the Public Service Commission of South Carolina ("Commission"). These cases have included depreciation studies in the electric, gas, water, wastewater, and pipeline industries. In addition to cases where I have submitted testimony, I have also supervised over 800 other depreciation or valuation assignments. Please refer to Appendix A for my qualifications

statement, which includes further information with respect to my work history, case experience, and leadership in the Society of Depreciation Professionals.

II. PURPOSE AND OVERVIEW OF TESTIMONY

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. I am testifying on behalf of Duke Energy Carolinas, LLC ("DEC" or the "Company").

Q. HAVE YOU FILED ANY EXHIBITS WITH YOUR TESTIMONY?

A. Yes. Attached to my testimony are Spanos Direct Exhibits 1 and 2. Spanos Direct Exhibit 1 is the 2021 DEC Depreciation Study ("2021 Depreciation Study" or the "Study"). Spanos Direct Exhibit 2 sets forth the depreciation rates that DEC is requesting Commission approve in this proceeding.

Q. WERE SPANOS DIRECT EXHIBITS 1 AND 2 PREPARED BY YOU, OR UNDER YOUR DIRECTION AND SUPERVISION?

A. Yes.

Q. IS SPANOS DIRECT EXHIBIT 1 TRUE AND ACCURATE TO THE BEST OF YOUR KNOWLEDGE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports the 2021 Depreciation Study filed in this case as Spanos Direct Exhibit 1. The Study was conducted under my direction and supervision for the electric utility plant of DEC. The Study utilizes widely recognized and adopted methods for setting depreciation rates. I have previously prepared similar

studies for DEC that have been utilized for rate setting in South Carolina. In my testimony I will support and explain the 2021 Depreciation Study that analyzed all electric plant as of December 31, 2021.

The depreciation rates resulting from the Study were calculated by me, and I support the Study, which I performed, as well as calculations of the depreciation rates resulting from the Study.

Q. PLEASE DEFINE THE CONCEPT OF DEPRECIATION.

A. Depreciation refers to the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility plant during service from causes that are known to be in current operation, against which the Company is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, obsolescence, changes in the art, changes in demand, and the requirements of public authorities.

III. OVERVIEW OF 2021 DEPRECIATION STUDY

Q. PLEASE DESCRIBE SPANOS DIRECT EXHIBIT 1.

A. Spanos Direct Exhibit 1 is a report entitled "2021 Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of December 31, 2021." This report sets forth the results of my 2021 Depreciation Study for DEC.

Q. WHEN DID THE COMMISSION LAST CONSIDER DEC'S DEPRECIATION RATES?

A. The Commission last considered the Company's depreciation rates in Docket No. 2018-319-E. In that case, the 2016 Depreciation Study filed by the Company, along with the depreciation rates proposed by DEC, were found to be just and reasonable and approved by the Commission.

Q. HAVE THERE BEEN DEPRECIATION STUDIES PERFORMED SINCE THE COMMISSION LAST APPROVED DEPRECIATION RATES FOR DEC?

A. Yes. Since the conclusion of Docket No. 2018-319-E, DEC had completed the 2018 Depreciation Study, 2020 Nuclear Depreciation Study, and the 2021 Depreciation Study. The 2018 Depreciation Study took a comprehensive look at all of DEC's plant in service as of December 31, 2018.

The 2020 Nuclear Depreciation Study was used to develop analysis and recommendations regarding the impact of the planned Second License Renewals ("SLR") on the depreciable lives of nuclear stations located in the Carolinas, based on December 31, 2020, nuclear production plant balances. This resulted in depreciation rates that assumed an additional 20 years of nuclear operations.

Finally, the 2021 Depreciation Study is the most recent comprehensive study of depreciation rates undertaken by DEC and is the basis for the rates proposed for approval in this case. I performed all three of these Studies using well recognized procedures and methods of depreciation and they are consistent

with the approaches utilized in prior depreciation studies presented to this Commission.

Q. WHAT WAS THE PURPOSE OF THE 2021 DEPRECIATION STUDY USED IN THIS CASE?

A. The purpose of the 2021 Depreciation Study was to estimate the most current annual depreciation accruals related to electric plant in-service for ratemaking purposes and determine appropriate average service lives and net salvage percentages for each plant account.

Q. PLEASE DESCRIBE THE CONTENTS OF YOUR REPORT.

A. The 2021 Depreciation Study is presented in nine parts. Part I, Introduction, presents the scope and basis for the 2021 Depreciation Study. Part II, Estimation of Survivor Curves, includes descriptions of the methodology of estimating survivor curves. Parts III and IV set forth the analysis for determining service life and net salvage estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the concepts of depreciation and amortization using the remaining life. Part VI, Results of Study, presents a description of the results of my analysis and a summary of the depreciation calculations. Parts VII, VIII, and IX include graphs and tables that relate to the service life and net salvage analyses, and the detailed depreciation calculations by account.

The 2021 Depreciation Study also includes several tables and tabulations of data and calculations. Table 1 on pages VI-4 through VI-15 of the Depreciation Study presents the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2021, the book depreciation reserve,

and the calculated annual depreciation accrual and rate for each account or subaccount. The section beginning on page VII-2 presents the results of the retirement rate analyses prepared as the historical bases for the service life estimates. The section beginning on page VIII-2 presents the results of the net salvage analysis. The section beginning on page IX-2 presents the depreciation calculations related to surviving original cost as of December 31, 2021.

Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR DEPRECIATION STUDY.

A. I used the straight line remaining life method of depreciation, with the average service life procedure for all plant assets except some general plant accounts. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and rational manner.

For General Plant Accounts 391.00, 391.10, 393.00, 394.00, 395.00, 397.00, and 398.00, I used the straight line remaining life method of amortization. The annual amortization is based on amortization accounting that distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account and vintage.

Q. HOW DID YOU DETERMINE THE RECOMMENDED ANNUAL DEPRECIATION ACCRUAL RATES?

A. I did this in two phases. In the first phase, I estimated the service life and net salvage characteristics for each depreciable group, that is, each plant account or subaccount identified as having similar characteristics. In the second phase, I calculated the composite remaining lives and annual depreciation accrual rates based on the service life and net salvage estimates determined in the first phase.

Q. PLEASE DESCRIBE THE FIRST PHASE OF THE 2021 DEPRECIATION STUDY, IN WHICH YOU ESTIMATED THE SERVICE LIFE AND NET SALVAGE CHARACTERISTICS FOR EACH DEPRECIABLE GROUP.

A. The service life and net salvage study consisted of compiling historic data from records related to DEC's plant; analyzing these data to obtain historic trends of survivor and net salvage characteristics; obtaining supplementary information from DEC's management and operating personnel concerning practices and plans as they relate to plant operations; and interpreting the above data and the estimates used by other electric utilities to form judgments regarding average service life and net salvage characteristics.

Q. WHAT HISTORIC DATA DID YOU ANALYZE FOR THE PURPOSE OF ESTIMATING SERVICE LIFE CHARACTERISTICS?

A. I analyzed the Company's accounting entries that record plant transactions during the period 1960 through 2021. The transactions included additions, retirements, transfers, and the related balances. The Company records also included surviving dollar value by year installed for each plant account as of December 31, 2021.

Q. WHAT METHOD DID YOU USE TO ANALYZE THIS SERVICE LIFE DATA?

A. I used the retirement rate method. This is the most appropriate method when aged retirement data are available, because this method determines the average rates of retirement actually experienced by the Company during the period of time covered by the Study.

Q. PLEASE DESCRIBE HOW YOU USED THE RETIREMENT RATE METHOD TO ANALYZE DEC'S SERVICE LIFE DATA.

A. I applied the retirement rate method to each different group of property in the Study. For each property group, I used the retirement rate method to form a life table which, when plotted, shows an original survivor curve for that property group. Each original survivor curve represents the average survivor pattern experienced by the several vintage groups during the experience band studied. The survivor patterns do not necessarily describe the life characteristics of the property group; therefore, interpretation of the original survivor curves is required to use them as valid considerations in estimating service life. The Iowa-type survivor curves were used to perform these interpretations.

Q. WHAT IS AN "IOWA-TYPE SURVIVOR CURVE" AND HOW DID YOU USE SUCH CURVES TO ESTIMATE THE SERVICE LIFE CHARACTERISTICS FOR EACH PROPERTY GROUP?

A. Iowa-type curves are a widely used group of generalized survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies. The Iowa curves were developed at the Iowa State

College Engineering Experiment Station through an extensive process of observing and classifying the ages at which various types of property used by utilities and other industrial companies had been retired.

Iowa-type curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. The Iowa curves and truncated Iowa curves were used in this study to describe the forecasted rates of retirement based on the observed rates of retirement and the outlook for future retirements.

The estimated survivor curve designations for each depreciable property group indicate the average service life, the family within the Iowa system to which the property group belongs, and the relative height of the mode. For example, the Iowa 45-R1.5 indicates an average service life of forty-five years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a low height, 1.5, for the mode (possible modes for R type curves range from 1 to 5).

Q. WHAT APPROACH DID YOU USE TO ESTIMATE THE LIVES OF SIGNIFICANT PRODUCTION FACILITIES?

A. I used the life span technique to estimate the lives of significant facilities for which concurrent retirement of the entire facility is anticipated. In this technique, the survivor characteristics of such facilities are described using interim survivor curves and estimated probable retirement dates. The interim survivor curve describes the rate of retirement related to the replacement of elements of the facility, such as, for a power plant, the retirement of assets such as pumps, motors, and piping that occur during the life of the facility. The probable

retirement date provides the rate of final retirement for each year of installation for the facility by truncating the interim survivor curve for each installation year at its attained age at the date of probable retirement. The use of interim survivor curves truncated at the date of probable retirement provides a consistent method for estimating the lives of the several years of installation for a particular facility since a single concurrent retirement for all years of installation will occur when it is retired.

Q. IS THIS APPROACH WIDELY ACCEPTED FOR ESTIMATING THE SERVICE LIVES OF PRODUCTION FACILITIES?

A. Yes. The life span has been used previously for DEC as well as for Duke Energy Progress, LLC ("DEP"). My firm has also used the life span technique in performing depreciation studies presented to many other public utility commissions across the United States and Canada.

Q. HOW ARE THE LIFE SPANS ESTIMATED FOR DEC'S PRODUCTION FACILITIES?

A. The life span estimates are based on informed judgment that incorporates factors for each facility, such as the technology of the facility, management plans and outlook for the facility, and the estimates for similar facilities for other utilities. For hydro facilities that have operating licenses, the life span estimates are based on the license dates for each facility. For nuclear units, the life span estimates are based on a 20-year relicensing for each unit, which produces life spans around 80 years, which is consistent with the expected second license renewal.

Q. HAVE ANY LIFE SPAN ESTIMATES CHANGED SINCE THE COMMISSION LAST APPROVED DEPRECIATION RATES?

A. Yes. Since the Commission last approved depreciation rates on May 21, 2019, in its Order No. 2019-323 in Docket No. 2018-319-E, life span estimates have changed. The life span for the Allen Units were shortened from 2026 to 2023, the Marshall Units were shortened from 2034 to 2028 or 2032, and the Belews Creek Units were shortened from 2037 to 2035. Finally, Cliffside Unit 5 was changed from 2032 to 2025, and the Lee Steam Unit was changed from 2030 to 2022 and has been retired. The nuclear units were all extended 20 years due to plans for relicensing consistent with the 2020 Nuclear Depreciation Study. For hydro units, Bad Creek was extended to 2067. For other production units, the Lincoln Combustion Turbines were extended to 2040 and all the solar facilities were extended by 5 years.

Q. ARE THE NEW LIFE SPANS REASONABLE?

A. Yes. During the conduct of this and the previous depreciation study, DEC personnel identified the revised life spans for most steam facilities and a few other generating facilities. These revised life spans are consistent with expectations within the industry.

Q. ARE THE NEW LIFE SPANS CONSISTENT WITH COMPANY PLANS?

A. Yes. During the conduct of this Depreciation Study and the previous depreciation study, DEC personnel identified the revised life spans for some steam facilities, the Bad Creek Pump Storage facility as well as a few other production units.

These revised life spans are consistent with Company plans at the time the Study was performed.

Q. ARE THERE ANY ASSET CLASSES FOR WHICH THERE ARE CHANGES SINCE THE LAST STUDY?

A. Yes. The Company had a program in place to replace its existing legacy electric meters with new technology meters. This replacement project was completed by the end of 2019. These meters were retired, therefore, the remaining asset classes for meters are Account 370.00, Meters and Metering Equipment and Account 370.02, Meters – Utility of the Future. Assets that were not replaced due to this program, such as instrument transformers, remain in Account 370.00, Meters and Metering Equipment and have a 13-L0 survivor curve.

Q. ARE THE FACTORS CONSIDERED IN YOUR ESTIMATES OF SERVICE LIFE AND NET SALVAGE PERCENTS PRESENTED IN SPANOS DIRECT EXHIBIT 1?

A. Yes. A discussion of the factors considered in the estimation of service lives and net salvage percents are presented in Part III and Part IV of Spanos Direct Exhibit 1.

Q. DID YOU PHYSICALLY OBSERVE DEC'S PLANT AND EQUIPMENT AS PART OF YOUR DEPRECIATION STUDY?

A. Yes. I made field reviews of DEC's property during May 2022 to observe representative portions of plant. Also, I have conducted field visits as part of prior studies in October 2003, March 2009, June 2012, December 2016, January 2017, and April 2019. Field reviews are conducted to become familiar with

Company operations and obtain an understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements. This knowledge was incorporated in the interpretation and extrapolation of the statistical analyses.

Q. WOULD YOU PLEASE EXPLAIN THE CONCEPT OF "NET SALVAGE"?

A. Net salvage is a component of the service value of capital assets that is recovered through depreciation rates. The service value of an asset is its original cost less its net salvage. Net salvage is the salvage value received for the asset upon retirement less the cost to retire the asset. When the cost to retire exceeds the salvage value, the result is negative net salvage.

Inasmuch as depreciation expense is the loss in service value of an asset during a defined period, e.g., one year, it must include a ratable portion of both the original cost and the net salvage. That is, the net salvage related to an asset should be incorporated in the cost of service during the same period as its original cost so that customers receiving service from the asset pay rates that include a portion of both elements of the asset's service value, the original cost, and the net salvage value.

For example, the full recovery of the service value of a $20,000 circuit breaker will include not only the $20,000 of original cost, but also, on average, $3,500 to remove the breaker at the end of its life and $500 in salvage value. In this example, the net salvage component is negative $3000 ($500 - $3,500), and the net salvage percent is negative 15% (($500 - $3,500)/$20,000).

Q. PLEASE DESCRIBE HOW YOU ESTIMATED NET SALVAGE PERCENTAGES.

A. The net salvage percentages estimated in the 2021 Depreciation Study were based on informed judgment that incorporated factors such as the statistical analyses of historical net salvage data; information provided to me by the Company's operating personnel; general knowledge and experience of industry practices; and trends in the industry in general. The statistical net salvage analyses incorporate the Company's actual historical data for the period 2003 through 2021 and considers the cost of removal and gross salvage ratios to the associated retirements during the 19-year period. Trends of these data are also measured based on three-year moving averages and the most recent five-year indications.

Q. WERE THE NET SALVAGE PERCENTAGES FOR GENERATING FACILITIES BASED ON THE SAME ANALYSES?

A. Yes, for the interim net salvage estimates. The net salvage percentages for generating facilities were based on two components, the interim net salvage percentage and the final net salvage percentage. The interim net salvage percentage is determined based on the historical indications from the period 2003 to 2021 of the cost of removal and gross salvage amounts as a percentage of the associated plant retired. The final net salvage or dismantlement component was determined based on the retirement activities associated with the assets anticipated to be retired at the concurrent date of final retirement.

Q. HAVE YOU INCLUDED A DISMANTLEMENT OR DECOMMISSIONING COMPONENT INTO THE OVERALL RECOVERY OF GENERATING FACILITIES?

A. Yes. A dismantlement or decommissioning component has been included to the net salvage percentage for steam, hydro, and other production facilities.

Q. CAN YOU EXPLAIN HOW THE FINAL NET SALVAGE COMPONENT IS INCLUDED IN THE DEPRECIATION STUDY?

A. Yes. The dismantlement component is part of the overall net salvage for each location within the production assets. Based on studies for other utilities and the cost estimates of DEC, it was determined that the dismantlement or decommissioning costs for steam, hydro, and other production facilities is best calculated by dividing the dismantlement cost by the surviving plant at final retirement. These amounts at a location basis are added to the interim net salvage percentage of the assets anticipated to be retired on an interim basis to produce the weighted net salvage percentage for each location. The detailed calculations of the overall net salvage for each location are set forth on page VIII-3 of the Depreciation Study.

Q. WHAT IS THE BASIS OF THE DISMANTLEMENT OR DECOMMISSIONING COST ESTIMATES?

A. The decommissioning cost estimates are based on the Decommissioning Cost Estimate Study performed by Burns and McDonnell (now known as 1898 & Co) and sponsored by DEC Witness Nicholas G. Speros. The Decommissioning Cost Estimate Study is included as Speros Direct Exhibit 2. The estimates are based on

the current cost to decommission the facility. However, the costs to decommission power plants has tended to increase over time (as have construction costs in general). For this reason, to recover the full decommissioning costs for each site, these costs need to be escalated to the time of retirement. The calculations of the escalation of these costs have been provided in the table set forth on pages VIII-4 and VIII-5 of the Depreciation Study.

Q. PLEASE DESCRIBE THE SECOND PHASE OF THE PROCESS THAT YOU USED IN THE 2021 DEPRECIATION STUDY IN WHICH YOU CALCULATED COMPOSITE REMAINING LIVES AND ANNUAL DEPRECIATION ACCRUAL RATES.

A. After I estimated the service life and net salvage characteristics for each depreciable property group, I calculated the annual depreciation accrual rates for each depreciable group based on the straight line remaining life method, using remaining lives weighted consistent with the average service life procedure. The calculation of annual depreciation accrual rates was developed as of December 31, 2021.

Q. PLEASE DESCRIBE THE STRAIGHT LINE REMAINING LIFE METHOD OF DEPRECIATION.

A. The straight line remaining life method of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life.

Q. PLEASE DESCRIBE AMORTIZATION ACCOUNTING.

A. Amortization accounting is used for accounts with many units, but small asset values. In amortization accounting, units of property are capitalized in the same manner as they are in depreciation accounting. However, depreciation accounting is difficult for these assets because periodic inventories are required to properly reflect plant in-service. Consequently, retirements are recorded when a vintage is fully amortized rather than as the units are removed from service. That is, there is no dispersion of retirement. All units are retired when the age of the vintage reaches the amortization period. Each plant account or group of assets is assigned a fixed period, which represents an anticipated life during which the asset will render service. For example, in amortization accounting, assets that have a 20-year amortization period will be fully recovered after 20 years of service and taken off the Company books, but not necessarily removed from service. In contrast, assets that are taken out of service before 20 years could remain on the books until the amortization period for that vintage has expired.

Q. FOR WHICH PLANT ACCOUNTS IS AMORTIZATION ACCOUNTING BEING USED?

A. Amortization accounting is only appropriate for certain General Plant accounts. These accounts are 391.00, 391.10, 393.00, 394.00, 395.00, 397.00, and 398.00, which represent slightly more than one percent of depreciable plant.

Q. PLEASE USE AN EXAMPLE TO ILLUSTRATE THE DEVELOPMENT OF THE ANNUAL DEPRECIATION ACCRUAL RATE FOR A PARTICULAR GROUP OF PROPERTY IN YOUR DEPRECIATION STUDY.

A. I will use Account 365.00, Overhead Conductors and Devices, as an example because it is one of the largest depreciable groups.

The retirement rate method was used to analyze the survivor characteristics of this property group, which represents the combination of Account 365.00, Overhead Conductors and Devices and Account 365.10, Overhead Conductors and Devices – Storm Securitization. Aged plant accounting data were compiled from 1960 through 2021 and analyzed in periods that best represent the overall service life of this property. The life tables for the 1960-2021 and 1992-2021 experience bands are presented in the Depreciation Study on pages VII-169 through VII-172. Each life table displays the retirement and surviving ratios of the aged plant data exposed to retirement by age interval. For example, page VII-169 of Spanos Direct Exhibit 1 shows $15,613,099 retired during age interval 0.5-1.5 with $2,685,584,793 exposed to retirement at the beginning of the interval. Consequently, the retirement ratio is 0.0058 ($15,613,099/$2,685,584,793) and the survivor ratio is 0.9942 (1-0.0058). The life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 52-R0.5, on page VII-168 of Spanos Direct Exhibit 1.

The net salvage percent is presented on pages VIII-66 and VIII-67. The percentage is based on the result of annual gross salvage minus the cost to

remove plant assets as compared to the original cost of plant retired during the period 2003 through 2021. The 19-year period experienced negative $90,210,632 ($7,950,450-$98,161,082) in net salvage for $294,022,075 plant retired. The result is negative net salvage of 31% ($90,210,632/$294,022,075) on the statistics for this account as well as the three-year rolling averages and trend in recent years; the recommended net salvage for overhead conductors and devices is negative 30%.

My calculation of the annual depreciation related to original cost of electric utility plant as of December 31, 2021, for Account 365.00 is presented on pages IX-215 and IX-216 of Spanos Direct Exhibit 1. The calculation is based on the 52-R0.5 survivor curve, 30% negative net salvage, the attained age, and the allocated book reserve. The tabulation sets forth the installation year, the original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life, and annual accrual. These totals are brought forward to Table 1 on page VI-11.

Q. HAVE YOU DEVELOPED DEPRECIATION RATES FOR FUTURE ASSETS?

A. Yes. There are plans to add a new Lincoln Unit 17. The rates for these assets in Accounts 341.00 through 346.00 will be based on interim survivor curves for each account, a weighted net salvage percent for each account, and a 35-year life span for the location from the date of construction. There are plans to add the Duke Energy Plaza in Account 390.10, which will be based on an interim survivor curve, negative net salvage, and 60-year life span.

Additionally, depreciation rates for new battery storage assets for generation, transmission and distribution were included. These assets are based on a 15-L3 survivor curve. Each of these future rates for battery storage assets were approved in the prior case. However, many of these assets have been placed in-service with the same or similar parameters and the actual cost by account recorded. In this study, there are also future assets planned for Electric Vehicle facilities. Each of these asset categories will have an expected life of 10 years. Each of these future rates are presented on page VI-15 of Spanos Direct Exhibit 1.

Finally, it is important to note that future solar assets being planned may be constructed in a manner that may change the overall life parameters of new solar facilities.

Q. WERE THERE ANY ADDITIONAL CHANGES TO THE 2021 DEPRECIATION STUDY THAT RESULTED FROM THE NORTH CAROLINA PROCEEDING THAT SHOULD BE CONSIDERED IN THIS FILING?

A. Yes. The retirement date for Cliffside Unit 5 was changed to December 2030 which aligns with DEC's most recent Integrated Resource Plan. This change also changed the weighted net salvage component for Cliffside Unit 5. In addition, the decommissioning cost estimates for contingency and indirect cost adder were set at 10% and 5%, respectively. This change is also consistent with the depreciation study adopted in North Carolina.

Q. ARE THE DEPRECIATION AND AMORTIZATION RATES SET FORTH IN YOUR TESTIMONY AND EXHIBITS APPROPRIATE RATES FOR THE COMMISSION TO ADOPT IN THIS PROCEEDING FOR DEC?

A. Yes. Spanos Direct Exhibit 1, with the adjustments in Exhibit 2, appropriately reflects the rates at which the costs of DEC's assets are being consumed over their useful lives. These rates are an appropriate basis for setting electric rates in this matter and for the Company to use for booking depreciation and amortization expense going forward.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.